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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,212	01/02/2004	Fujio Akahane	Q79256	6653
23373	7590	08/04/2005	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			NGUYEN, LAMSON D	
			ART UNIT	PAPER NUMBER
			2861	

DATE MAILED: 08/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

(A)

**Office Action Summary**

Application No.

10/750,212

Applicant(s)

AKAHANE, FUJIO

Examiner

Lamson D. Nguyen

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-9 is/are rejected.
- 7) ☒ Claim(s) 2-4 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>01/02/04</u> . | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Katakura (6,371,601).

***Katakura teaches an inkjet head comprising:***

#### **Claim 1:**

- a plurality of liquid ejection units, each comprising:
  - a casting body, having a first pair of faces extending in a first direction, a second pair of faces connecting the first pair of faces and extending obliquely relative to the first direction (figure 2, units 1 and 2, each unit having a casting body which is the surface itself, each surface having a first pair of sides extending vertically, and a pair of sides parallel to each other but are oblique to the vertical pair of sides)
  - a plurality of nozzles, from which droplets are ejected, the nozzles arranged in the first direction to form a first nozzle array and a second nozzle array (figure 2 teaches each unit has a first nozzle array of nozzles 38 and second nozzle array of nozzles 39)

- the liquid ejection units are arranged such that one of the second pair of faces in one of the liquid ejection units and one of the second pair of faces in another one of the liquid ejection units are confronted with each other, so that the liquid ejection units are overlapped in both the first direction and a second direction perpendicular to the first direction (figure 2 teaches the oblique side of unit 1 confront the oblique side of unit 2 and that units 1 and 2 are overlapped in both directions)
- the first nozzle array in one of the units and first nozzle array in another one of the units constitute a first nozzle group, which is continuous as viewed from the second direction, for ejecting a first kind of liquid (figure 2 teaches the first nozzle array of unit 1 and the first nozzle array of unit 2 constitute one continuous nozzle group ejecting black ink designated by A1, as further taught in column 3, lines 60-67)
- the second nozzle array in one of the units and the second nozzle array in another one of the units constitute a second nozzle group, which is continuous as viewed from the second direction, for ejecting a second kind of liquid (figure 2 teaches the second nozzle array of unit 1 and the second nozzle of unit 2 constitute one continuous nozzle group ejecting a black ink designated by A2, as further taught in column 3, lines 60-67)

**Claim 5:**

- wherein the lengths of the first nozzle array and the second nozzle array are identical with each other (figure 2)

**Claim 6:**

- \* wherein the first kind of ink and the second kind of ink are identical (see claim 1 above)

**Claim 7:**

- wherein the first liquid and the second liquid are different from each other (figure 2 also teaches at B where B1 is black ink and B2 is cyan ink, as further explained in column 3, lines 60-67)

**Claim 8:**

- each of the units comprises a first liquid reservoir communicated with the nozzles in the first nozzle array, and a second liquid reservoir communicated with the nozzles in the second nozzle array (figure 2 teaches reservoir 8 supplying ink to nozzles 38 of the first nozzle array and reservoir 9 supplying ink to nozzles 39 of the second nozzle array)
- the first nozzle array and the second nozzle array are arranged between the first liquid reservoir and the second liquid reservoir, as viewed from a third direction which is orthogonal to the first and second direction (figure 2

teaches nozzle array of nozzles 38 and nozzle array of nozzles 39 are positioned between reservoirs 8 and 9)

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katakura in view of Endo (6,325,489).

Katakura teaches all claimed features of the invention with the exception of:

- the first nozzle array and the second nozzle are are shifted relative to each other in the first direction by a half of the constant interval

It is well-known in the art of inkjet printers to have nozzles of one array to be off-set to nozzles of another array by half, as taught by Endo (figure 1).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Katakura to incorporate the teaching of off-set nozzles as taught by Endo for the purpose of achieving higher printing resolution.


Art Unit: 2861

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lamson D. Nguyen whose telephone number is 571-272-2259. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Talbott can be reached on 571-272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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LAMSON NGUYEN  
PRIMARY EXAMINER  
01/29/01